BANKURA UNIVERSITY

B. Sc. (HONOURS) FIRST SEMESTER EXAMINATIONS, 2021

Subject: Computer Science **Course ID: 11512**

Course Title: Computer System Architecture

Full Marks: 25 **Time: 1 Hr. 15 min**

The figures in the margin indicate full marks

Answer all the questions.

UNIT I

1. Answer *any five* of the following questions: **(1 × 5 = 5)**

a) Using 2's complement arithmatic subtract: 100 – 11000

b) Represent the decimal number 8620 to binary

c) Write down the truth table of XOR gate

d) Why is cache memory used?

e) What is multiplexer?

f) What is PROM?

g) What is register?

h) Define instruction cycle.

UNIT II

2. Answer *any two* of the following questions: **(5 × 2 = 10)**

a) Design S-R flip-flop

b) Design a Half-subtractor

c) Distinguish between RAM and ROM

d) Discuss the importance of memory reference instructions in computer with examples.

UNIT III

3. Answer *any one* of the following questions: (10 × 1 = 10)

a) Obtain the simplified expression of F(w, x, y, z) = ∑ (1, 4, 6, 7, 8, 9, 10, 11, 15). Implement a full-adder circuit using a decoder circuit and basic gates. (5 + 5)

b) Discuss with a block diagram for Direct Memory Access transfer. Write short notes on different types of System Bus. (6 + 4)

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